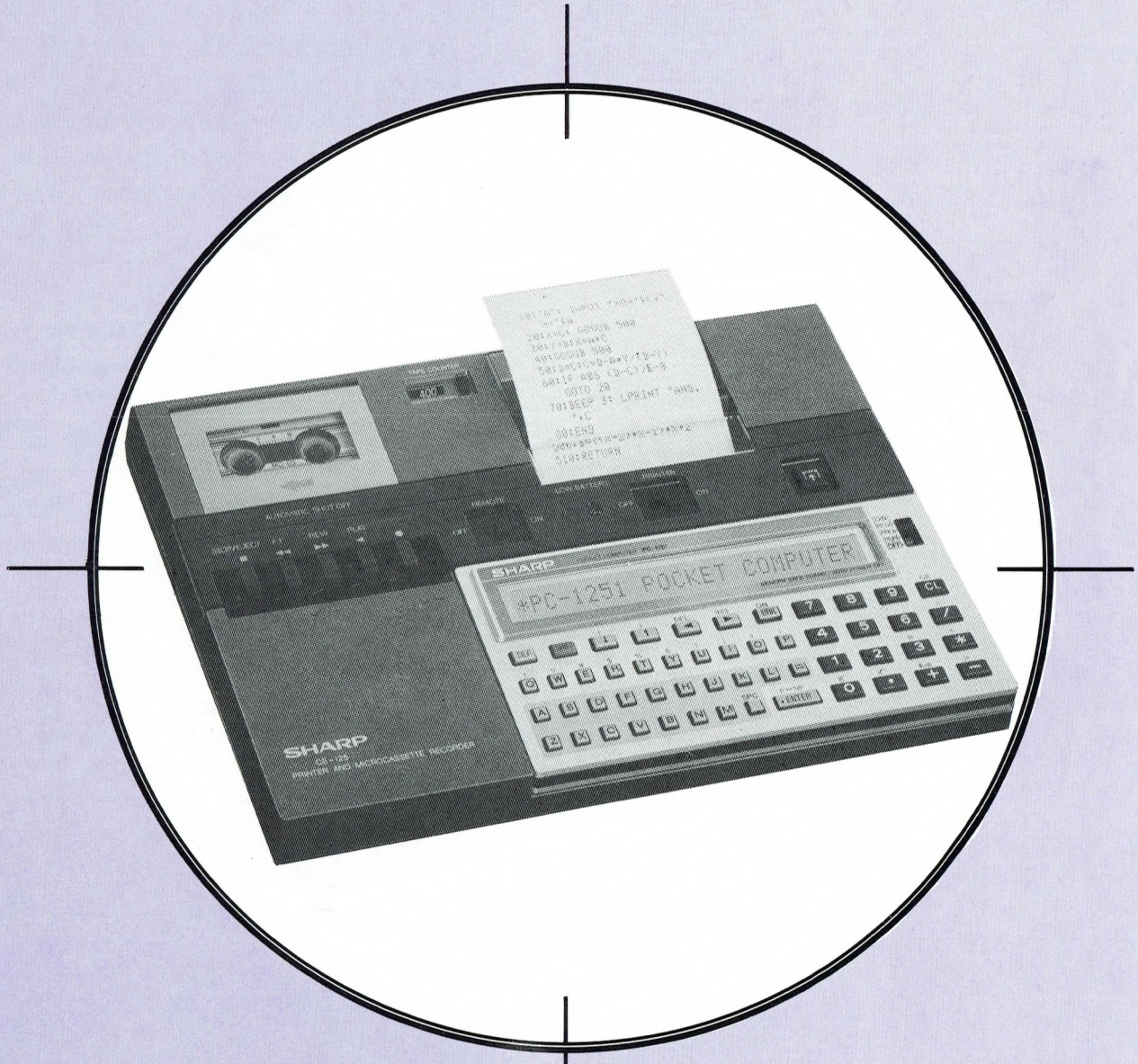
SHARP FOCUS

The Australian Magazine for SHARP Users

Issue No. 9 - March 1986 - $3.50



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- **SOFTWARE REVIEWS**
- **USER GROUP INFORMATION**
- **POCKET COMPUTER CONFIGURATION GUIDE**

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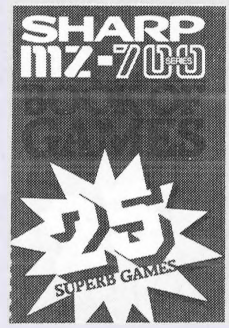

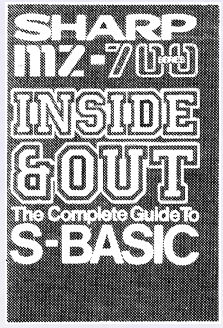

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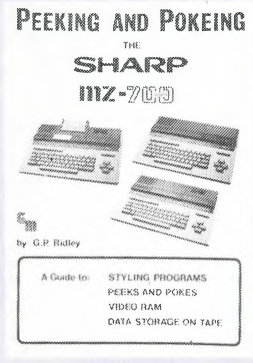

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but not enough space
leave your tongues hanging out

Ed

MEMORANDUM

To: SHARP FOCUS READERS **Date:** March 1986

From: The Editor

Subject: EDITORIAL

Now that we are three-quarters of the way through the first year of Sharp Focus' existence, you may be interested to know the spread of the magazine. Here's how it stands at the moment:

	Subs + Dealers	Newsagents	Overall
Overseas	2%	-	1%
ACT	2%	-	1%
NSW	22%	36%	26%
QLD	26%	9%	22%
SA	6%	10%	7%
Tas	2%	-	1%
Vic	26%	41%	31%
WA	14%	4%	11%

The gaps in the Newsagents' column are caused because the magazine is only available in the major cities of the five states listed. Victoria heads the list of having the largest readership, with NSW following closely behind. However, QLD can take joint honours with Victoria in the subscription stakes. It's not surprising therefore, that the contributions appear to fall into the same overall percentages.

Sharp Pocket computers are unquestionably popular and to ensure this position Sharp Corporation of Australia are running a series of free 'pocket computer seminars' in most states during March for existing and prospective users.

Which just leaves me enough space to mention the PC-1600 but not enough space to give you any details. You'll have to leave your tongues hanging out until next month!

Ed

MEMORANDUM

To: SHARP FOCUS READERS **Date:** March 1986

Editor

Letters

All letters should be addressed to:
The Editor,
Sharp Focus, Suite 1,
33 The Centreway,
Mt. Waverley, Vic
3149

I have tried to adapt a PC1251 program to my MZ721 without success. will Solo Basic run the ratings program enclosed?

G. Anderson, Dysart, QLD

In short, the answer is that Solo Basic will not make running this program any easier. We would suggest the following changes, although there may be other changes that are required in order for the program to run.

PC-1251	***MZ-700***
DIM N$(20)*12	***DIM N$(20)***

*The *12 portion of the statement in PC-1251 Basic limits the length of the array to 12 characters and is a memory saving device which is unnecessary on the MZ-700.*

WAIT128 -

The WAIT command on the PC-1251 has no equivalent in S-Basic and simply acts as a timer. This is necessary on the 1251 because, otherwise, PRINT statements would flash across the one line display so quickly, no one could read them.

BEEP2 USR(62)

BEEP is fairly obvious and the following parameter tells the 1251 the number of times to perform the command. The S-Basic equivalent is as stated above and could be repeated via a FOR-NEXT loop or simply by repeating the statement the required number of times (separated by colons of course!).

PAUSE -

The PAUSE statement is similar to the WAIT statement outlined above but the PC-1251 fixes the length of the delay. A FOR-NEXT loop could be used in S-Basic to simulate this statement.

GOTO 50-10* (C>5 or C<1) ON**GOTO

*The way GOTO has been used on the 1251 cannot be duplicated on the MZ-700 in standard S-Basic but can be duplicated if Basic Xtender (Strategy Software) is used. The only alternative in S-Basic is to work out all the possible calculations of the argument following the GOTO and replace the statement with ON**GOTO.*

AND *

The PC-1251 enables the use of the full word 'AND', whereas S-Basic requires this to be used as follows:

```
10 IF A=2 AND B=3 THEN.(1251)
10 IF (A=2)*(B=3) THEN..(700)
```

OR +

As for 'AND' shown in the previous example, the word 'OR' is used as follows in S-Basic:

```
10 IF A=2 OR B=3 THEN..(1251)
10 IF (A=2)+(B=3) THEN..(700)
```

If anyone has developed a complete list of changes required for conversion of a 1251 to an MZ-700, or any other choice of machines for that matter, perhaps they would care to share it with other readers.

I'm wrapped with your publication since it's inception in July 1985. I own a Sharp MZ731, a colour printer/plotter and a 5.25" disc drive.

Being stuck up here in North Queensland, I seem to be alone with my Sharp. According to the retailer where I bought it in March 1984, there have been many sold

here, but I can't find anyone else to converse or communicate with about them.

I have a few questions to ask of you to solve if you can.

1. When a syntax error occurs, can Basic be modified to clear the screen and list the line in question so as to enable quicker editing.
2. Can a screen print be accomplished on the 700 to the 4 colour printer/plotter.
3. How do I use the joystick routine for games etc.
4. Could you help me transfer the program WDPRO from tape to disc, using RDTAPE, so as to save/load data.

P.E. Murphy, Garbutt, QLD.

Taking your questions in the same order:

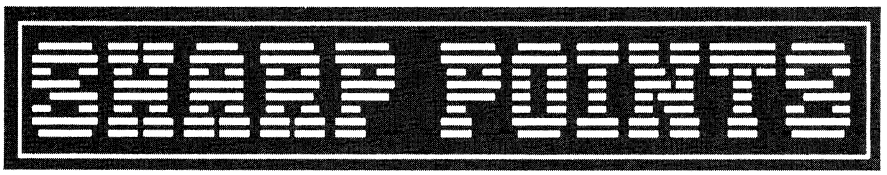
1. Merely depressing Function Key 2 followed by the relevant line number and carriage return will list the offending instruction. On the other hand, you could enter the following short program after loading Basic:

```
1  POKE $2189,$C3,0,$2D
2  POKE $2D00,$CD,9,0,$2A,
   $E6, $38,$22,$46,$41,$22,
   $54,$41, $CD,$2D,$41,$C3,
   $5F,$18
```

2. Yes, as long as it doesn't contain any graphics characters as these will not get printed.

3. This is best answered by an example below (from the MZ-1X03 instruction manual) which moves the character "♥" in the direction the Joystick is moved - one space is left open on the right edge of the screen). The example is for stick 1.

```
10 PRINT "C"
20 X=INT(JOY (0)/6.5)
30 Y=INT(JOY (1)/10.6)
40 IF X=39 THEN X=38
50 CURSOR X,Y
60 PRINT " ♥";
```



AUCTIONEERS PACKAGE

This package, previously installed on mini-computers for some larger auctioneers in Australia, is now available for the MZ-5600 and can handle the following functions:

Vendors File, Catalogue of items which can be printed, Invoicing, Receipting, Vendor Sales reporting and Sales Tax reporting

and boasts of reducing the massive effort and paperwork in the lead up to and the follow up from an auction sale. The recommended retail price is $2700. Apparently there is also another package available which is more suited fine art and antique auctioneers. Contact your Sharp dealer for more details.

LOGISTIX

LOGISTIX, now available for the MZ-5600* and PC-7000, is a powerful but easy to use integrated software system that provides the four key functions required by a professional microcomputer user, namely:

Spreadsheet calculations for numeric projections and analysis

Timesheet planning for assigning resources to tasks over periods of time

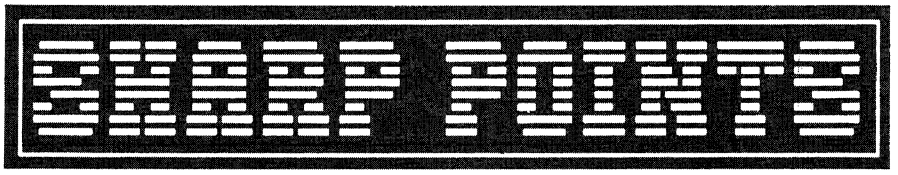
Database management for the storing and retrieval of lists of information

Graphic presentation for communication and trend analysis

By containing these key functions in a single electronic worksheet of over 2000 rows by 1000 columns, Logistix satisfies the broadest spectrum of user requirements in the simplest conceptual framework. The Spreadsheet can read and execute Lotus files and the graphics offer many more options than Lotus .... and it's in full colour! Training will be offered in all capital cities by a national firm of Chartered accountants.

The recommended retail price is $750.

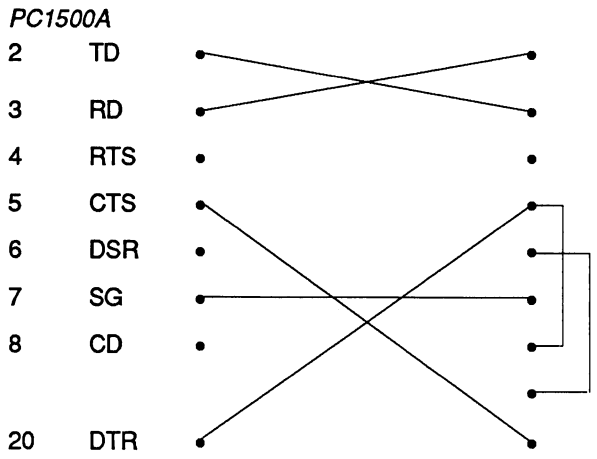
*The MZ-5600 version requires the RAM expansion MZ1R11 which in turn requires an expansion unit MZ1U02.



SHARP POINTS

PC1500A to PC1350/2500 Communications

CABLING



PC1500A ⇒ PC1350/2500

PC1500A
SETCOM 1200, 8, N, 1
SETDEV C0
OUTSTAT 0

(2) CSAVEa

PC1350/2500
OPEN"1200, N, 8, 1, A, C, & 1A"

(1) LOAD

"ERROR 4" appears, but program will have transferred OK. Remove error message by pressing CLS key.

PC1350/2500 ⇒ PC1500A

PC1500A
SETCOM 1200, 8, N, 1
SETDEV C1
OUTSTAT 0

(1) CLOADa

PC1350/2500
OPEN"1200, N, 8, 1, A, C, & 0D"

(2) SAVE

SHARP POINTS


```
70 FOR A=0 TO 20:NEXT
80 CURSOR X,Y
90 PRINT " ";
100 GOTO 20
```

To use the above example for stick 2, change the argument of the JOY function in lines 20 and 30: 0 to 2 and 1 to 3.

4. No, we can't help. Whether the program WDPRO is resident on disc or tape, it will only save to or load from tape.

I believe there is a dump facility in the MZ-700 monitor, but I cannot find it in the manual. Could you point me in the right direction please?

A.W. Blackman, Canberra, ACT

*Entering the BYE command at the Ready prompt returns control of the computer from Basic to the monitor program in RAM. You can find the monitor functions on Page 99 of the manual. The dump command has the format *Dsssseeee where ssss is the hex start address and eeee is the hex end address.*

If the end address is omitted, the contents of the 128-byte block starting at the specified address are dumped. If both addresses are omitted, it dumps the contents of the 128-byte block following the memory block previously dumped.

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Expanding your Character set

by Garth Rymer

Following my article last month on Pixel Magic, the reference section of the new PC1251 manual also carries a long section on the printout of special characters with the CE125 Printer/Micro Cassette recorder or with the CE126P Printer and Cassette interface.

The respective character sets for the CE125 and the CE126P are quite impressive including Greek letters and some special mathematical characters and are shown below and on the next page.

The Sharp instructions advise not to use certain character codes otherwise all the keys, power and mode switches will lock up requiring that the reset switch on the back of the computer be pressed. (At this time also turn the CE126P power off and then back on again).

The character codes **not** to use are:

Decimal	Hexadecimal
8	&08
10	&0A
13	&0D
14	&0E
15	&0F

Character Code Table (CE-125)

Upper digit →

↓ Lower digit	Hexadecimal number	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
	0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	*1	+	*5	0	@	P	E	p	0	+	*6				Ä	0
1	1	≠	–	!	1	A	Q	a	q	1	–	｡				Ë	
2	2	Σ	x	"	2	B	R	b	r	2	x	｢				Ü	
3	3	C	÷	#	3	C	S	c	s	3	÷	｣				Ï	
4	4	P	=	$	4	D	T	d	t	4	/	､				Ö	
5	5	E	◇	%	5	E	U	e	u	5	–	･				À	♠
6	6	"	≥	&	6	F	V	f	v	6	⊣					È	♥
7	7	▫	–	⊐	7	G	W	g	w	7	_					Ù	♦
8	8	*2	√	(	8	H	X	h	x	8	(					Â	♣
9	9	Π	π	)	9	I	Y	i	y	9	)					Ê	α
10	A	*3	↴	*	:	J	Z	j	z	10	×					Û	β
11	B	◣	→	+	;	K	√	k	{	11	_					Î	γ
12	C	◿	←	,	<	L	¥	l	¦	12	X̄					Ô	σ
13	D	*4	↑	–	=	M	π	m	}	♪	¬					É	λ
14	E	θ	↓	·	>	N	^	n	~	A M	"					Ç	δ
15	F	≒	Ø	/	?	O	_	o	■	P M	–					ß	£

Note:

*1	Remarks 1)	Space
*2	Remarks 2)	Space
*3	Remarks 3)	Paper feed command
*4	Remarks 4)	Printout command
*5	Remarks 5)	Space
*6	Remarks 6)	Space

Example of " * " code
Hexadecimal number &2A
Decimal number 42 (32+10)

Example of " ♥ " code
Hexadecimal number &F6
Decimal number 246 (240 + 6)

In order to get your PC1251 and the CE125 or CE126P to print their character sets, you must declare a singly-dimensioned string array with the string length set to 3 characters each (see line 10 in the program below). Following this, a POKE routine to hex C5C4 inputs data (of up to three characters in length) to execute the initial setting of the printer (see line 20).

In line 30, the CALL command transfers execution from Basic to the PC1251's CPU and hex 7DFE is the code to enter the printout routine. Line 40 reads the data from data statements 100 and 110 into the printout data memory (hex C5C5). A maximum of 24 digits can be printed in each row of the CE125 and CE126P as this is the maximum they are capable of storing in their print buffers.

```
 10:DIM Z$(1)*3
 20:POKE &C5C4,2,0,121,1
    24,125,55,2,13,121,1
    24,125,55
 30:CALL &7DFE
 40:FOR J=1 TO 24: READ
    A: POKE &C5C5,A:
    CALL &C5C4: NEXT J
 50:CALL &C5CA
 60:CALL &7E08
100:DATA 32,32,32,32,80,
    111,99,107,101,116,3
    2,67,111,109,112,117
    ,116,101,114,32,32
110:DATA 32,32,32

     Pocket Computer
```

The data values come from the CE125 character code table and is in decimal form. For example 80 = capital P, 112 = small p, and so on.

Line 50 executes a CALL command at hex C5CA so that the printout occurs.

Character Code Table (CE-126P)

Upper digit →

Lower digit ↓	Hexadecimal number	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
0	0	*1	+	*7	Ø	@	P	⊞	p	0	+	*9				Ä	Ø
1	1	≠	–	!	1	A	Q	a	q	1	–	◦				Ë	
2	2	Σ	x	"	2	B	R	b	r	2	x	⌜				Ü	
3	3	ℂ	÷	#	3	C	S	c	s	3	÷	⌟				Ï	
4	4	ℙ	=	$	4	D	T	d	t	4	/	ˋ				Ö	
5	5	⊞	◇	%	5	E	U	e	u	5	–	·				À	♠
6	6	▪	≥	&	6	F	V	f	v	6	⊣					È	♥
7	7	▫	–	*8	7	G	W	g	w	7	_					Ù	◆
8	8	*2	√	(	8	H	X	h	x	8	(					Â	♣
9	9	∥	π	)	9	I	Y	i	y	9	)					Ê	α
10	A	*3	↴	*	:	J	Z	j	z	10	×					Û	β
11	B	◣	→	+	;	K	√	k	{	11	⎵					Î	γ
12	C	◿	←	,	<	L	¥	l	¦	12	X̄					Ô	σ
13	D	*4	↑	–	=	M	π	m	}	♪	⌝					É	λ
14	E	*5	↓	·	>	N	^	n	~	AM	"					Ç	δ
15	F	*6	Ø	/	?	O	_	o	■	PM	–					β	£

Line 60 executes a CALL command at hex 7E08 which exits the printout routine and returns to Basic. The final result is a program which prints in both upper and lower case - normally the two printers provide upper case only.

A word of warning in using these commands for printing. You must be careful not to print beyond 24 digits per operation. If you do, the initial data is cleared and only the last 24 digits are printed. You must also make sure that when printing more than one line of data, each line contains exactly 24 digits. You can fill the empty locations with spaces (decimal code 32).

If you refer to the previous example you will see the FOR statement in line 40 reads 24 pieces of data, and the data statements in lines 100 and 110 contain exactly that number. As long as one full line is read and printed each time you will have no problems printing multiple lines.

The advantages of being able to call upon upper and lower case characters and many native language characters should be readily apparent.

I've developed a small statistics program using the appropriate Greek symbols in the headings and the printout of data.

PROGRAM

```
 10:"A": CLEAR : RESTORE
 20:GOSUB 400
 30:LPRINT " "
 40:GOSUB 420
 50:LPRINT " "
210:N=0:T=0:S=0:A=0
220:INPUT "WEIGHT-1 NO W
    EIGHT-2",A
230:INPUT "X=";X
235:LPRINT "X=";X
240:IF A=1 THEN GOTO 320
250:F=1
260:N=N+F
270:T=T+F*X
280:S=S+F*X*X
290:GOTO 230
300:"C": PAUSE "CUT"
310:F=-F: GOTO 260
320:INPUT "FI=";F
325:LPRINT "FI=";F
330:GOTO 260
340:"B":X=T/N
345:V=((S-N*X*X)/(N-1))
350:S=√((S-N*X*X)/(N-1))
    : LPRINT " "
355:GOSUB 420
360:LPRINT N: GOSUB 420
365:LPRINT T: GOSUB 420
370:LPRINT X: GOSUB 420
380:LPRINT S: GOSUB 420
385:LPRINT V: LPRINT " "
    : LPRINT " "
390:END
400:DIM Z$(1)*3
420:POKE &C5C4,2,0,121,1
    24,125,55,2,13,121,1
    24,125,55
430:CALL &7DFE
435:FOR K=1 TO 24
440:READ C: POKE &C5C5,C
    : CALL &C5C4
445:NEXT K
450:CALL &C5CA
470:DATA 32,32,32,77,101
    ,97,110,32,38,32,83,
    116,97,110,100,97,11
    4,100,32,68,101,118
475:DATA 32,32
480:DATA 32,32,32,32,32,
    32,32,32,110,32,2,32
    ,156,32,252,32,86,32
    ,32,32,32,32,32,32
500:DATA 110,20,32,32,32
    ,32,32,32,32,32,32,3
    2,32,32,32,32,32,32,
    32,32,32,32,32,32,32
510:DATA 2,20,32,32,32,3
    2,32,32,32,32,32,32,
    32,32,32,32,32,32,32
    ,32,32,32,32,32
520:DATA 156,20,32,32,32
    ,32,32,32,32,32,32,3
    2,32,32,32,32,32,32,
    32,32,32,32,32,32,32
530:DATA 252,20,32,32,32
    ,32,32,32,32,32,32,3
    2,32,32,32,32,32,32,
    32,32,32,32,32,32,32
540:DATA 86,20,32,32,32,
    32,32,32,32,32,32,32
    ,32,32,32,32,32,32,3
    2,32,32,32,32,32
600:RETURN
```

Printout from program

```
    Mean & Standard Dev

          n Σ x̄ σ V

X=10.
X=10.5
X=10.4
X=10.2
X=10.3
X=10.4
X=10.1
X=10.25
X=10.35

n=
                              9.
Σ=
                           92.5
x̄=
                  10.27777778
σ=
            1.583331713E-01
V=
            2.506939313E-02
```

Note:

DEF 'A'	Enter data values
DEF 'B'	Print out answers
DEF 'C'	Correct frequency of weighted data

Note also the use of upper and lower case letters plus Greek letters in the heading and body of the printout.

The routine for the expanded character set starts at line 400 and ends at line 600.

Many applications exist where the expanded character set of the CE125 or CE126P will be useful. I encourage you to experiment with what is available. It's loads of fun!

To print out all characters available on the both printers, use the program on Page 224 in the new manual.

Next month Garth provides some Tricks and Tips for use on the PC1251 and associated printers along with a gallimaufry of other information.

Q. Which 2.5 inch floppy disc drive holds up to 500k bytes (unformatted), records on 200 tracks per inch, requires only 2 watts during read/write operation and weighs half as much as a 3.5" disc drive?

A. If you don't get next month's magazine you will never know!

Software Reviews

A Word-Processing program for the MZ-700/MZ-800 and an advanced Mathematics package for the 'pockets' falls under the spotlight.

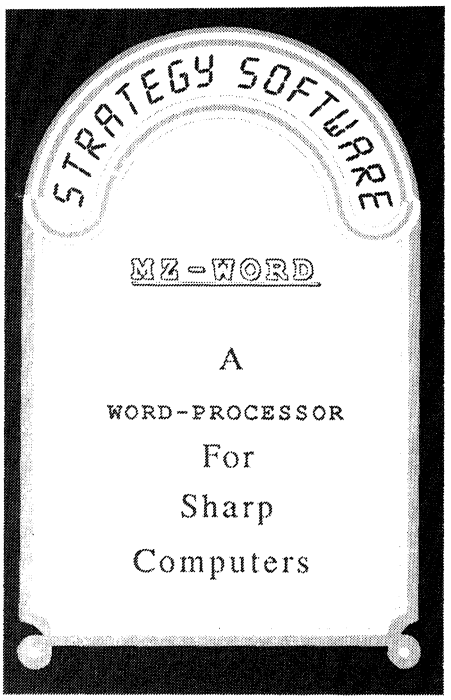
MZ-WORD
Reviewed by Derek Clarke

Where others might find their joys in playing games I delight in word processors. Not for me the endless quest to rescue Esmeralda as I always find the pen (printer) mightier than the sword. That might be sour grapes as I still cannot get off the second screen in "Hunchie" whereas my 16 year old at his first try worked his way through the screens, putting his toe into the water so as to speak, and now quite regularly dashes through them quite easily in times around the minute mark.

So, I sat down with the instruction book for "MZ-WORD" and decided to give it a try. It is said to be the easiest word-processor for the SHARP MZ-700 on the market and at first reading it certainly seemed straight forward enough. Put into practice I found that the first limitation was the same old problem - I can type faster than the Sharp keyboard will allow. This results in double letters such as " l " in "allow" coming up as one single "l". Therefore proof-reading is essential prior to final print.

Secondly, to employ the circumflex control character the book tells you that it appears on the undefined key. Used in the unshifted position it appears on the screen and carries out its function to the printer for the control characters for "Bold", "Underline", "Expanded" and "Condensed" however to be used as an instruction such as 'PRINT" plus the others that appear on the screen it needs to be used in conjunction with the Control key. In these cases the character does not appear on the screen - or the information in the instruction book.

I am typing this critique as I learn the various points of the program - there is nothing like learning on the job - and there is still one problem that I have not been able to fathom out. According to the book when one comes to the end of an entry and wants to print it out the instruction is a "CR", which the book shows as "-", followed by



circumflex "p". Logically this should stop the printer a t the end of printing, however, I have found that the printer then form-feeds when printing is finished. (Since commencing this I have put the critique on one side and produced quite a lot of other paper work on the "MZ-WORD" and not had the form feed problem. I can only presume that somewhere in my original setting up I put in a form-feed that has somehow become embedded in the heading. It definitely is not in the visible text and is now one of those mysteries that will take more time to unravel than is worth the effort. Suffice it to say I have not had the problem

since I wrote the above.

Unlike some other processors this one does not provide automatic paragraphing. One has to remember to provide the necessary carriage returns and and blank places at the start of the next sentence. I am informed that the current system in word processing is to have all lines commence at the same left hand margin therefore there is not any need to provide paragraphing. However, I am from the old school where one was taught to indent all paragraphs three spaces, and that is the style of writing that I still use.

The keyboard is automatically set up as a typewriter, that is, it has lower case as the normal position and needs the shift control to provide the upper case letters. Numerals are as normal.

I do the donation receipts for my Church in a BASIC program that I wrote using an AMUST P88-2 printer and the Mills Harris Interface set on "SHARP". "MZ-WORD" requires the interface set on ASCII otherwise garbage results. Moving between the two programs can provide some amusing moments as the screen set-up is alright but the eventual printout leaves a lot to be desired. Similarly, when "MZ-WORD" loads it automatically runs and requests you to nominate your printer, either a Sharp or an Epson-compatible. The answer needs to be spot-on with the tape or Quick-Disk that you will possibly be loading as any error at this point will result in a lot of wasted effort.

So, what are my thoughts on this particular processor? The set-up is not as easy to master as expected and there can be some very funny results during the learning period however, once mastered, I found it very usable and adaptable. Features supported by the printer and not accessible within the program can be entered via a special instruction and the addition of the code required by the printer. There are all the usual facilities, delete, move, copy and locate. Prior to printing it is possible to view the text on the screen ready formatted. Running into problems in the middle of text input isn't too much of a hassle either as there are two "Help" screens easily accessible.

LOADING and SAVING to either Tape or Quick disk is easily carried out once one remembers that circumflex "File" has to be punched in first. This results in a question as to whether one wishes to LOAD or SAVE and then asks for a file-name. If the file-name has been forgotten or has been incorrectly entered each name on the tape/disk will be printed on the screen. The program can be stopped with the Shift/Break keys and then remains in a position of suspended animation. The only way that I have been able to find back into the program at this point is to reset the computer then type J 1200. This will bring you back to the start but at least you know the correct name of the file to be LOADed.

The Shift/Break keys are used in other instances, as called for on the screen, but then they return directly to the program at the point at which it has been left. There are a number of text-editing options open to the user that can be embedded into the text and changed at will at any point. There is also a whole series of instructions that can be placed in the text area that can set up the printer to print in Bold, Expanded, Condensed or underlined, print page numerals, determine the number of blank lines at the head or foot of a page, set left and right margins, justify or centre lines or form feed. When sending the text to the printer you can also nominate the number of copies to be printed.

What are my thoughts after a month or so of use? I like it. It is the easiest word-processor that I have ever used. I have the one proviso in that you must spend time getting used to it and determining what you want to do. If you are a letter-writer, exploring the use of the left hand margin to set up the address panel rather than using spaces is recommended.

Derek Clarke

Advanced Mathematics Package
Reviewed by David Saunders

It took me ninety-seven seconds to load this package from cassette (into a PC-1350). The programs in it total a little under 2500 bytes. I got to wondering how long it would have taken me to have done those programs myself.

The first task I would have to undertake would have been research. That would be necessary because of the range of programs in the package. So, I will list the programs and alongside them write my guess as to how long it would take me to find the appropriate formulae for them!!

1. Matrix operators (using the Gauss-Jordan method with partial pivoting) - two hours research.
2. Interpolation (using the Lagrange method) - two hours
3. Base conversion (up to base

16) - half hour
4. Complex numbers calculation - four hours
5. Real root solution (using Newton's method) - three hours
6. Rectangular/spherical conversion - quarter hour
7. Area of a polygon - quarter hour
8. Triangle solutions (given three known values) - quarter hour
9. Integration (using Simpson's rule) - two hours
10. Rectangular/polar conversion - quarter hour
11. Factorial - quarter hour
12. Hyperbolic functions - two hours

So we can say that I would spend about sixteen and three quarter hours just finding how to do the jobs. Other people might take considerable less time and there would be some who ....., I'll drop that line.

Add to this the time of actually writing the programs and of entering them into the machine - something that I do as one operation. Also add the time of running trials and of debugging. Maybe another ten hours - after all that research I would be quite familiar with the subjects. Allowing that I couldn't do all the above work in one continuous sitting, it would probably be more than a week from taking the decision to do the job till it was actually fully operational. Compares rather unfavourably with ninety-seven seconds!!

And the package comes with a very plain operations manual which makes for easy usage. It is assumed, to quote from the manual, "that the user is familiar with both the computer, its accessories and the advanced mathematics operations". In other words no formulae are given in the manual except where they are used in calculation examples. The package is not designed to teach the mathematics involved but rather to solve problems using those mathematics.

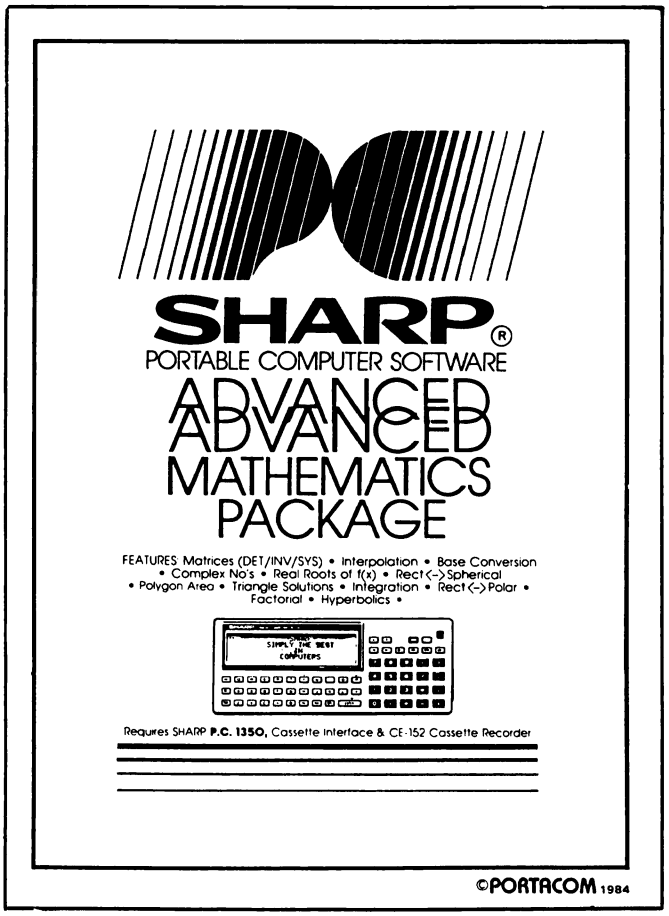
The manual nominates, for each program, the variables used. This, presumably, is done so that if the user is writing programs of his own he will not inadvertently receive values from those variables if he mixes the use of his own and package programs. Also nominated in the manual is the particular variable in which the package's calculated result is stored. That would allow recall of that value for use in further calculations or user-written programs.

The rectangular-polar conversion, the factorial and the hyperbolics programs have the details of the subroutines used so that the user could use them in any programs he may wish to write which may utilise those functions.

I feel that this is a very good package but potential purchasers would have to evaluate the cost/usefulness of it for their own needs and abilities.

The package retails at $29.95 and comes in four version - one each for the PC-1350, the PC-1401, the PC-1450 and the PC-1500A (you have to state your machine when buying). The PC-1350 version will also run on the PC-2500.

David Saunders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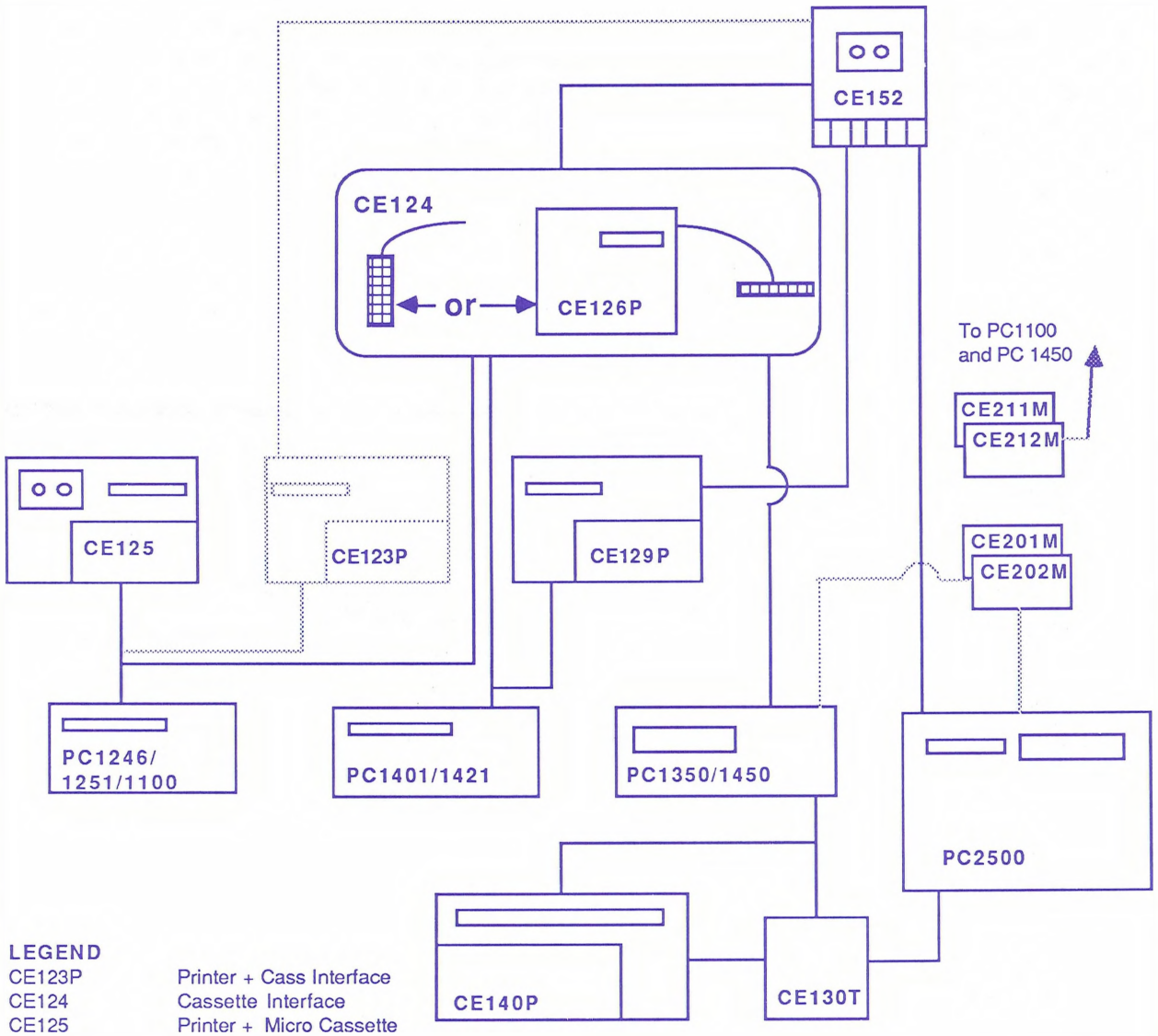
Pocket Computer Configuration Guide

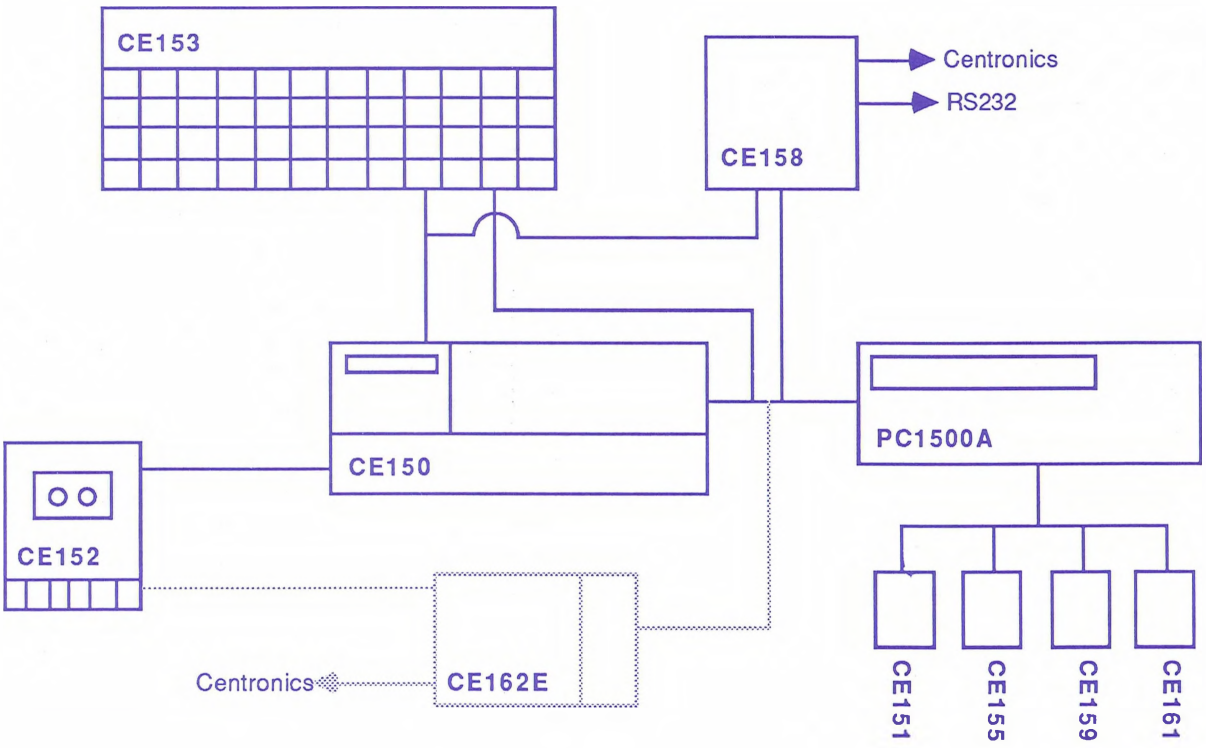
As promised in the Letters section of our second issue (August 1985), we present a configuration guide of the popular Pocket Computers and associated peripherals. The PC1500A warrants its own guide and can be seen on the facing page. Our thanks to Steve Jones for his time in compiling the guides.



LEGEND

CE123P	Printer + Cass Interface
CE124	Cassette Interface
CE125	Printer + Micro Cassette
CE126P	Printer + Cass Interface
CE129P	Printer + Cass Interface
CE130T	RS232 level converter and I/face
CE140P	Four colour Printer
CE152	Cassette Recorder
CE201M to CE212M	RAM Cards: 201M and 212M = 8k, 202M=16k, 211M=4k

PC-1500A Configuration Guide



LEGEND

CE150	Printer + Cassette Interface
CE151	4k RAM
CE152	Data Cassette Recorder
CE153	Software Board
CE155	8k RAM
CE158	RS232 + Centronics Interface
CE159	8k RAM/ROM
CE161	16k RAM
CE162E	Printer and Cassette Interface

Two Utilities

by Michael Caldwell

These two utilities for the PC-1350 may well save some legwork (or should that be fingerwork?). The first provides extra characters and the second renumbers lines.

Extra Characters

Many PC-1350 owners could find this program useful; it allows access, directly through the keyboard of 9 characters previously only available through the command CHR$.

The relevant characters are:

[	CHR$(91)
\	CHR$(92)
]	CHR$(95)
'	CHR$(96)
{	CHR$(123)
|	CHR$(124)
}	CHR$(125)
~	CHR$(126)

These characters are positioned in Reserve Memory on the shifted keys A-L on the second row. If the program below is run then these keys can no longer be used to store key words as the character on that key will be lost. All the other Reserve keys remain usable as normal.

The program uses the first 18 bytes of Reserve Memory.

Entering the Program

First clear reserve memory by placing the computer in Reserve mode and typing NEW. Then put the computer back in RUN or PROG mode and enter the following lines without line numbers:

```
POKE &6F6F, &81, &5B,
&F3, &5C, &84, &5D, &86,
&5F, &87, &60
POKE &6F79, &88, &7B,
&8A, &7C, &8B, &7D, &8C,
&7E
```

Now that the program is entered, it can be tested by pressing the reserve keys A-L which should print the corresponding character. If one of the first 5 doesn't work re-enter the first line and if one of the last 4 characters doesn't work re-enter the second line.

For those with a cassette interface the program can be saved on tape in the same way reserve memory is normally saved.

You may have noticed that the card symbols, full block, and insert symbols (CHR$245 - 250) are still not available. When using the same system as above the line freezes up after entering the new character and only enters it if it's the first on the line. I have no explanation for this and would be interested to hear suggestions. I did however, write a short program earlier that allowed full access to any character in the character set when writing programs; this saves memory, screen space, looks better and is more understandable than CHR$(x).

The program works by the user placing a rarely used character, like one from reserve memory, into the positions where the new character is required. The Character Change Program (CCP) then goes through the program being worked upon and changes those characters specified to the new character.

For example, enter

```
10 Print "[HELLO["
```

and run CCP to change the "[" (91) to " ♦ " (247). Then list the line, which should show:

```
10 Print "♦HELLO♦"
```

To run DEF C

```
65275:"C":CLEAR:CLS:WAIT0
 :PRINT"CHARACTER CHANGE
 PROGRAM"
65276:INPUT"change from
 Chr$";A:INPUT"To
 Chr$";B
65277:FOR D=PEEK&6F02*256
 +PEEK&6F01+5TO27695-MEM
 -150:IF PEEK D=A POKE
 D,B
```

```
65278:IF PEEK D=13 LET
  D=D+3
65279: NEXT D
```

The program sits above the program being worked on so can be saved on cassette and merged or typed in when needed. It is very important that after the program has been typed in it takes up 150 bytes or the program may run over itself. This can be tested by typing the equation [Memory Size before CCP - Mem size after typing in CCP]. If any changes are going to be made to the CCP the 150 in line 65277 must be changed to the new memory size of the program. This program will run on all PC-1350s regardless of Memory Size.

Line Renumber Program

This program renumbers basic programs starting at a given line number and stepping up by any specified value. The program does not renumber GOTO's and GOSUB's

To run DEF=

```
65274:"=":CLS:CLEAR:WAIT0
 :PRINT" LINE RENUMBER
 PROGRAM"
65275:INPUT"Start
 Renumber?";A:INPUT"Step
 By?";B:L=A
65276: If L>255 LET
 H=H+1:L=L-256:GOTO
 65276
65277:FOR C=PEEK&6F02*256
 +PEEK&6F01+1TO27694-MEM
 -214:POKE C,H,L:L=L+B
65278:If L>255 LET
 H=H+1:L=L-256:GOTO
 65276
65279:C=C+PEEK(C+2)+2:
 NEXT C
```

The Line Renumber Program, in similar fashion to CCP, is entered above the basic program being renumbered. If possible it should be saved on cassette and merged in when needed. This will eliminate mistakes, for if the program does not take up exactly 214 bytes it may renumber itself or not renumber the whole program being worked on. If any changes are made to the program the 214 in line 65277 should be changed to equal the memory the program uses.

This program is also designed to run on all PC-1350's regardless of memory size.

If the world was passing you by when Sharp Focus was first launched in July 1985, you can catch up with

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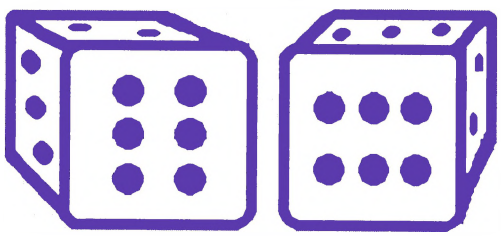
Double Header

by Peter and Chris Rehberg

The Rehberg family provides two games for the MZ-700 and MZ-800. They are relatively new to the 700 and admit that the programs can probably be improved. No doubt they can be - most of the programs published are meant to be the groundwork for aspiring 'super-progs'!

The first program is called "Two-Down" written by Peter Rehberg. It's a dice game for two players, the object of which is to score as many points as possible before throwing a '2'. The art is to know when to stop and preserve your score.

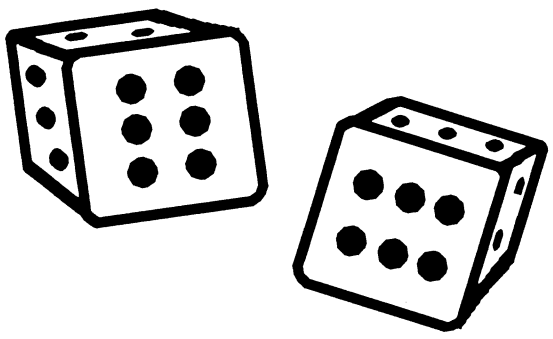
Chris Rehberg, just 11 years old, provides a topical 'trivia' quiz with some 50 questions already included in his program. There is plenty of scope to change or add more questions and answers.



```
10 REM TWO DOWN, A GAME BY P & C
REHBERG
20 REM <C> PETER REHBERG 1985
30 CLS
40 SC=0:HS=0:F=4
50 DIMNA$(2),SC(2),HS(2)
60 GOTO1130
70 FORN=1TO2
80 CLS:PRINT[1,7]"YOUR INITIALS PL
AYER";N;" ? ":USR(62):PRINT
90 INPUTNA$(N)
100 NEXTN
110 CLS
120 FORX=5TO25
130 FORY=15TO33STEP7
140 SETX,Y,2
150 NEXTY,X
160 X=5:FORY=11TO29:SETX,Y,2:SETX+
10,Y,2:SETX+20,Y,2:NEXT
170 FC=5
180 PRINT[FC,2]"T W O - D O W N "
190 FORX=0TO79:SETX,0,2:SETX,49,2:
NEXTX
200 FORY=0TO49:SET0,Y,2:SET79,Y,2:
NEXTY
210 CURSOR4,6:PRINTNA$(1):CURSOR9,
6:PRINTNA$(2)
220 NA$=NA$(1):N=1:HS=HS(N):GOTO25
0
230 NA$=NA$(2):N=2:HS=HS(N):GOTO25
0
240 NA$=NA$(1):N=1:HS=HS(N)
250 CONSOLE
260 C=53435
270 POKEC,114,112,112,112,115
280 POKEC+40,217,0,0,0,221
290 POKEC+80,121,0,0,0,121
300 POKEC+120,184,120,120,120,187
310 FORT=1TO1000:NEXTT:GOSUB560
320 POKEC+3,0,0,0,0
330 POKEC+44,0:POKEC+84,0:POKEC+12
```

```
4,0
340 POKEC+123,0
350 POKEC+39,114,169,120,159
360 POKE53514,113,0,0,121
370 POKE53554,113,0,0,121,0,0
380 POKE53594,50,167,120,187,0,0
390 POKE53435,0,0,0:POKE53512,220:
POKE53552,220
400 GOSUB560
410 POKE53512,0:POKE53550,220
420 GOSUB560
430 POKE53550,0,0,0
440 POKE53630,220,0,220
450 GOSUB560
460 POKE53630,0,0,0
470 POKE53710,220,0,220
480 GOSUB560
490 POKE53710,0,0,0
500 GOTO570
510 C=53355
520 POKEC,114,112,112,112,115
530 POKEC+40,217,0,0,0,221
540 POKEC+80,121,0,0,0,121
550 POKEC+120,184,120,120,120,187
560 FORT=1TO200:NEXTT:GOSUB1090:RE
TURN
570 D=53790
580 POKED,114,112,112,112,115,0,0,
114,112,112,112,115
590 POKED+40,113,0,0,0,61,0,0,113,
0,0,0,61
600 POKED+80,113,0,0,0,61,0,0,113,
0,0,0,61
610 POKED+120,113,0,0,0,61,0,0,113
,0,0,0,61
620 POKED+160,50,60,60,60,51,0,0,5
0,60,60,60,51
630 V=INT(6*RND(1))+1
640 ONVGOTO650,660,670,680,690,700
650 POKE53872,71:SC=SC+1:GOTO710
660 POKE53832,71:POKE53912,71:GOTO
710
670 POKE53831,71:POKE53872,71:POKE
53913,71:SC=SC+3:GOTO710
680 POKE53831,71,0,71:POKE53911,71
,0,71:SC=SC+4:GOTO710
690 POKE53831,71,0,71:POKE53872,71
:POKE53911,71,0,71:SC=SC+5:GOTO710
700 POKE53831,71,0,71:POKE53871,71
,0,71:POKE53911,71,0,71:SC=SC+6:GO
TO710
710 W=INT(6*RND(1))+1
720 ONWGOTO730,740,750,760,770,780
730 POKE53879,71:SC=SC+1:GOTO790
740 POKE53839,71:POKE53919,71:GOTO
790
750 POKE53838,71:POKE53879,71:POKE
53920,71:SC=SC+3:GOTO790
760 POKE53838,71,0,71:POKE53918,71
,0,71:SC=SC+4:GOTO790
770 POKE53838,71,0,71:POKE53879,71
:POKE53918,71,0,71:SC=SC+5:GOTO790
780 POKE53838,71,0,71:POKE53878,71
,0,71:POKE53918,71,0,71:SC=SC+6:GO
TO790
790 IFHS(N)=>200THENGOTO1060
800 IF(V=2)+(W=2)THEN900
810 IFNA$=NA$(1)THEN830
820 GOTO840
830 F=4:CURSORF,13:PRINTUSING"###"
;SC:GOTO850
840 F=9:CURSORF,13:PRINTUSING"###"
;SC
850 CURSOR14,20:PRINT"  ANOTHER TH
ROW ? ";NA$
860 GETZ$:IFZ$=""THEN860
870 IFZ$="N"THENUSR(62):GOTO940
880 IFZ$="Y"THEN GOTO920
890 GOTO860
900 SC=0:CURSOR14,20:PRINT"YOU LOS
T YOUR TURN";NA$:GOSUB1040:FORT=1T
O400:NEXTT:GOTO1010
910 CONSOLE3,17,19,16:CLS:GOTO230
920 IFNA$=NA$(1)THEN980
930 GOTO990
940 IFNA$=NA$(1)THEN960
950 GOTO970
960 F=4:CURSORF,9:HS(N)=HS+SC:PRIN
TUSING"###",HS(N):SC=0:HS=0:CONSOL
E3,17,19,16:CLS:GOTO230
970 F=9:CURSORF,9:HS(N)=HS+SC:PRIN
TUSING"###";HS(N):SC=0:HS=0:CONSOL
E3,17,19,16:CLS:GOTO220
980 F=4:CURSORF,13:PRINTUSING"###"
;SC:CONSOLE3,17,19,16:CLS:GOTO240
990 F=9:CURSORF,13:PRINTUSING"###"
;SC:CONSOLE3,17,19,16:CLS:GOTO230
1000 END
1010 CURSOR14,20:PRINT[6,0]" NEXT
PLAYER PLEASE!"
1020 CONSOLE3,17,19,16:CLS:IFNA$=N
A$(2)THENF=4:GOTO240
```

```
1030 F=9:GOTO230
1040 TEMPO6:FORX=1TO2:MUSIC"G4E4":
NEXT
1050 RETURN
1060 CURSOR14,20:PRINT[4,0]"CONGRA
TULATIONS    ";NA$(N);
1070 CURSOR21,22:PRINT[4,0]"YOU WO
N !"
1080 END
1090 FORM=1TO5 :FORA=50TO60:POKE26
18,A:USR(68)
1100 NEXTA:USR(71):NEXTM
1110 RETURN
1120 END
1130 COLOR,,2,0:CLS
1140 PRINT"■■■■■■■■■■You have 2 dic
e to throw."
1150 PRINT"■After each throw you a
dd up your points!
1160 PRINT"■You may keep the point
s by pushing (N)o,"
1170 PRINT"■ or cont. by pushing (
Y)es ."
1180 PRINT"■■■HOWEVER, if any of t
he two dice shows   a 2"
1190 PRINT"■■you loose your sub-to
tal but keep your   HI-score"
1200 PRINT"■■■■■■■■■■■■HI-SCORE =
 200"
1210 PRINT"■■■■■■■■■■■MAY THE BEST
 MAN WIN"
1220 PRINT"■■■■■■■ARE YOU READY ?(
Y/N )"
1230 GETZ$:IFZ$=""THEN1230
1240 IFZ$="N"THEN1230
1250 IFZ$="Y"THENCOLOR,,7,1:GOTO70
```



```
10 COLOR,,6,0
20 CLS
30 PRINTTAB(14);"Chris' Quiz."
40 PRINTTAB(10);"        EXP.1"
50 PRINTTAB(8);"HURSTVILLE-AUSTRAL
IA"
60 PRINT"           COPYRIGHT (1985
)."
70 TEMPO7:MUSIC"-#G5-#A5R5#D5#C5-#
A8#C7#D7-#G5-#A8R5"
80 PRINT"THIS IS A QUIZ WHICH TEST
S"
90 PRINT"  YOUR GENERAL KNOWLEDGE"
100 PRINT
110 PRINT"I WILL ASK YOU A QUESTIO
N & THEN WAIT"
120 PRINT"FOR YOUR ANSWER.IF YOUR
ANSWERIS CORRECT"
130 PRINT"I WILL PROCEED TO THE NE
XT QUESTION.IF"
140 PRINT"YOUR ANSWER IS INCORRECT
 I WILL SHOW THE"
150 PRINT"CORRECT ANSWER & THEN PR
OCEED TO THE "
160 PRINT"NEXT QUESTION."
170 PRINT
180 PRINT"MOST ANSWERS ARE 1 WORD.
"
190 PRINT"ALL ANSWERS MUST BE CORR
ECTLY SPELLED"
200 PRINT"THERE IS A TOTAL OF 50 Q
UESTION'S"
210 PRINT"HOW MANY QUESTIONS DO YO
U WANT TO TRY"
220 COLOR,,2,0
230 INPUTN
240 CLS
250 DIMS(50)
260 CONSOLE7,12,0,39:CLS
270 C=0
280 N1=0
290 RESTORE
300 IFC=NTHEN480
310 C=C+1
320 PRINT
330 PRINT"Question #";C
340 PRINT
350 X=INT(50*RND(1))
360 IFS(X)=1THEN350
370 S(X)=1
380 FORQ=1TOX:READQ$,A$:NEXTQ
```

```
390 PRINTQ$;
400 INPUTR$
410 IFR$=A$THEN450
420 PRINT[4,0]"■■■■■■■■INCORRECT A
NSWER"
430 PRINT[1,7]"THE CORRECT ANSWER
IS ";A$;". "
440 GOTO290
450 USR(62):PRINT[0,6]"CORRECT ANS
WER--VERY GOOD! "
460 N1=N1+1
470 GOTO290
480 PRINT
490 COLOR,,7,1
500 PRINT"OUT OF ";N;" QUESTIONS Y
OU ANSWERED";N1;"        CORRECTLY.
"
510 P=INT((N1/N)*100+.5)
520 PRINT" YOUR PERCENTAGE FOR COR
RECT ANSWERS IS";P;"%  WHY DON'T Y
OU GO TO A TV-QUIZ!":CONSOLE
530 TEMPO6:MUSIC"#F3#F1E1#C3E3#F3A
3#F5#F3#F1E1#C3E3#F3B3A5#C3#C1B1-#
G3-B3#C3E3#C5#C3#C1-B1-#G3E3E3F5R3
"
540 DATA"WHAT WAS Mrs.PEELS FIRST
NAME IN THE AVENGERS","EMMA"
550 DATA"WHAT NICKNAME DID IAN CHA
PPELL RECIEVE ","CHAPPELLI"
560 DATA"HOW MANY TENTHS OF THE EA
RTHS SURFACE LIE UNDERWATER","SEVE
N"
570 DATA"HOW DO YOU WRITE 99 IN RO
MAN NUMERALS","XCIX"
580 DATA"WHAT IS 3.14159 BETTER KN
OWN AS","PI"
590 DATA"WHAT'S THE SPEED LIMIT ON
 GERMAN AUTOBAHNS","UNLIMITED"
600 DATA"WHAT DOES A GYNOPHOBIC MA
N FEAR","WOMEN"
610 DATA"HOW MANY HORSES IN A POLO
 TEAM","FOUR"
620 DATA"HOW MANY YEARS DID SLEEPI
NG BEAUTY SLEEP","ONE HUNDRED"
630 DATA"WHATS THE COMMON NAME FOR
 AN ANIMALS MARSUPIUM","POUCH"
640 DATA"WHATS THE CAPITAL OF BAVA
RIA","MUNICH"
650 DATA"WHATS THE CAPITAL OF MORR
OCO","RABAT"
660 DATA"WHAT GAME INCLUDES A LEAD
 PIPE & A ROPE AMONG ITS MURDER WE
APONS","CLUEDO"
670 DATA"WHATS THE SQUARE ROOT OF
900","THIRTY"
680 DATA"WHAT MAMMAL LIVES THE LON
GEST","HUMAN"
690 DATA"HOW MANY STARS MAKE UP OR
ION'S BELT","THREE"
700 DATA"HOW MANY CLAWS DOES A HOU
SECAT HAVE","EIGHTEEN"
710 DATA"WHAT COUNTRY IS THE WORLD
S LARGEST EXPORTER OF FROGS LEGS",
"JAPAN"
720 DATA"WHAT PLANET IS NEAREST TH
E SUN","MERCURY
730 DATA"WHAT DOES A PHONOPHOBE FE
AR","NOISE"
740 DATA"WHAT WOULD YOU BE IN IF Y
OU DID AN ESKIMO ROLL","KAYAK"
750 DATA"HOW MANY SIDES DOES A CUB
E HAVE","SIX"
760 DATA"WHAT WERE GEORGE WASHINGT
ONS FALSE TEETH MADE OUT OF","WOOD
"
770 DATA"WHATS THE ZODIAK SYMBOL F
OR ARIES","RAM"
780 DATA"WHAT GAME IS PLAYED WITH
A FLAT STICK CALLED A KIP","TWO UP
"
790 DATA"WHAT ORDER OF INSECTS CON
TAINS THE MOST SPECIES","BEETLES"
800 DATA"WHAT DOES THE TYPICAL PER
SON DO 295 TIMES DURING THE DINNER
 HOUR","SWALLOW"
810 DATA"WHO WON THE 1982 NOBLE PE
ACE PRIZE","NO ONE"
820 DATA"WHAT DID THE OLD WOMAN IN
 THE SHOE GIVE HER CHILDEREN TO EA
T","BROTH"
830 DATA"WHAT CITY IS GRACED BY TH
E ARCH OF TITUS","ROME"
840 DATA"WHAT PRODUCT'S SECERET FO
RMULAR IS 7X","COKES"
850 DATA"WHAT COUNTRY HAS THE LOWE
ST HIGHEST MOUNTAIN","AUSTRALIA"
860 DATA"WHAT IS A PYROTECHNIC DIS
PLAY","FIREWORKS"
870 DATA"HOW MANY EYES DOES AN EAR
THWORM HAVE","NONE"
880 DATA"WHAT COUNTRY IS THE HELVE
TIAN REPUBLIC","SWITZERLAND"
```

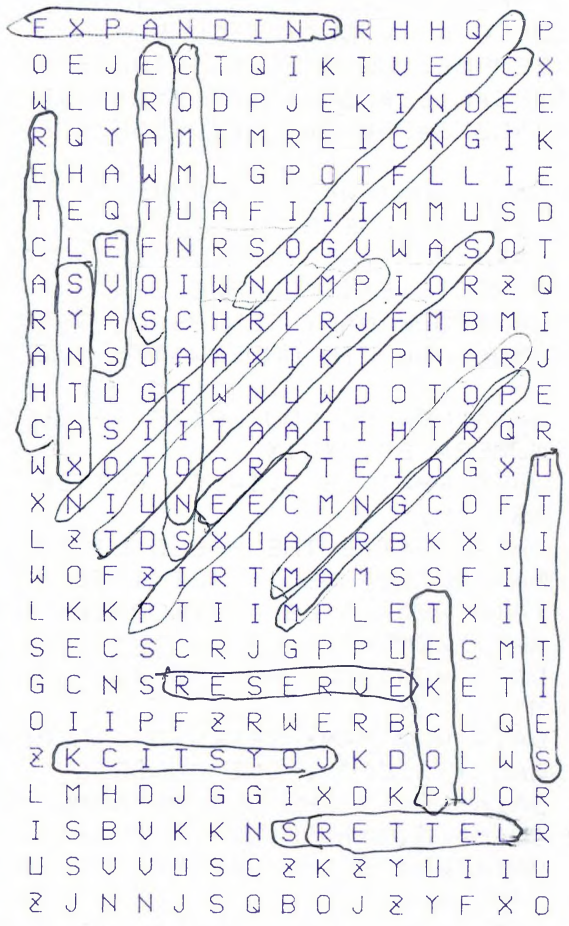
```
890 DATA"WHAT J.R.R. TOLKIEN BOOK
FEATURES BILBO BAGGINS AS THE CENT
RAL CHARACTER","THE HOBBIT"
900 DATA"WHAT SEASON IS HAIL MOST
PREVALENT IN","SUMMER"
910 DATA"HOW MANY FINALLY MADE IT
TO FREEDOM IN THE GREAT ESCAPE","T
HREE"
920 DATA"WHAT WAS THE FIRST METAL
MINED IN AUSTRALIA","COPPER"
930 DATA"WHAT FUNGUS IS USED IN MA
KING BREAD","YEAST"
940 DATA"WHATS THE CAPITAL OF NORT
HERN IRELAND","BELFAST"
950 DATA"WHERE DID KIWI FRUIT COME
 FROM","CHINA"
960 DATA"HOW MANY DICE ARE USED TO
 PLAY YAHTSEE","FIVE"
970 DATA"WHAT DID SIR WALTER RALEI
GH LOSE IN 1618","HIS HEAD"
980 DATA"WHAT CELESTIAL BODY IS TH
E CENTRE OF THE JOVIAN SYSTEM","JU
PITER"
990 DATA"HOW MANY GOLD MEDALS DID
MARK SPITZ WIN AT THE 1972 MUNICH
OLYMPICS","SEVEN"
1000 DATA"WHAT NUMBER IS REPRESENT
ED IN MORSE CODE BY 5 DOTS","FIVE"
1010 DATA"WHAT COUNTRY DID UMBERTO
 2 REIGN OVER AS ITS LAST KING","I
TALY"
1020 DATA"WHAT COUNTRY WAS FIRST T
O WIN SOCCERS WORLD CUP 3 TIMES","
BRAZIL"
1030 TEMPO6:MUSIC"R3E3G3#G3A3E3+C5
A5+D3+E3+C1+D3+C1A3A3+C5A5G3A2R0A2
D3E3C3D3-A5"
```

Don't forget our new address is now:
Suite 1, 33 The Centreway
Mount Waverley
Victoria 3149
Telephone: (03) 232 7055

WORDSEARCH

Last month we featured a game called WordSearch submitted by Terry Gill. Just to prove it works, the listing below is the output from a 15 by 25 grid using 20 words. We've made the first word easy to find, but see if you can spot the other 19!

EXPANDING CONFIGURATION SYNTAX
FUNCTION INSTRUCTION JOYSTICK
COMMUNICATIONS LETTERS MONITOR
PIXEL CHARACTER PRINTOUT
SOFTWARE (appears twice) MATHEMATICS
POCKET UTILITIES RESERVE
PROGRAM SAVE



Back to Basics

As mentioned in the last Back to Basics, this month we take a look at a program written using only subroutines.

The program is a simple mailing list database and I have deliberately left space for you to complete your own print and delete routines.

But what is a subroutine and why use them?

Simply put, a subroutine is a group of instructions within a program that can be used repeatedly. In our sample program, the 'launching pad' to the subroutines is the screen menu. Every time the subroutine is called all the instructions within the subroutine are executed. You can see that they are convenient for executing a program segment repeatedly, without having to repeat the instructions in the program every time they are required.

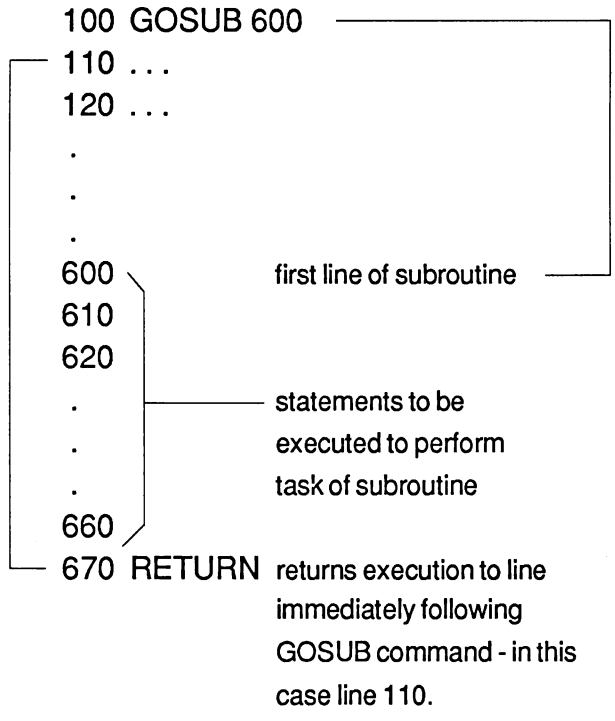
The two relevant commands are GOSUB and RETURN. The action of a GOSUB command is similar to a GOTO but in addition contains a RETURN. After completing a subroutine, execution is RETURNed back to the line statement immediately following the GOSUB. The RETURN command must always form the last line of a subroutine.

Test it out with the following program.

```
10 REM* MAIL  LIST PROGRAM USING S
UBROUTINES
20 REM* MAIN SUBROUTINE - SETUP &
MENU
30 REM*
40 DIM NA$(50),AD$(50),SU$(50),PC(
50)
50 CLS:CURSOR 16,4 : PRINT "MAIL L
IST"
60 PRINT:PRINT:PRINT:PRINT"1. ADD"
:PRINT"2. CHANGE":PRINT"3. DELETE"
:PRINT"4. PRINT":PRINT"5. SAVE":PR
INT"6. LOAD":PRINT"7. VIEW"
70 REM* THERE ARE 7 SUBROUTINES RE
QUIRED TO RUN THE PROGRAM - FIVE O
F THEM HAVE BEEN IMPLEMENTED - THE
 REST IS UP TO YOU!
80 GET  A:IF(A<1)+(A>7)THEN 80
90 ON A GOSUB 1000,2000,3000,4000,
5000,6000,7000
100 GOTO50
1000 REM* ADD ROUTINE:A=0
1010 FORJ=NR+1TO50
1020 CLS:PRINTJ:PRINT"ENTER NAME";
:PRINTTAB(25);:INPUTNA$(J)
1030 PRINT"ENTER ADDRESS";:PRINTTA
B(25);:INPUTAD$(J)
1040 PRINT"ENTER SUBURB";:PRINTTAB
(25);:INPUTSU$(J)
1050 PRINT"ENTER POSTCODE";:PRINTT
AB(25);:INPUTPC(J)
1060 GOSUB 8000
1065 IFFL=2THEN RETURN2040
1070 IFYN$="Y"THEN1100
1080 CLS:GOTO1020
1100 INPUT"ANOTHER (Y/N)";YN$
1110 IF(YN$<>"Y")*(YN$<>"N")THEN11
00
1120 IFYN$="Y"THEN NEXTJ
1130 IFYN$="N"THEN NR=J:      RETUR
N
```

```
2000 REM* CHANGE ROUTINE:A=0:REM*
SETFLAG:FL=2
2010 CLS:INPUT"WHICH RECORD DO YOU
 WISH TO CHANGE       -0 TO EXIT";R
N
2020 IFRN =0 RETURN
2030 J=RN:GOSUB1020
2040 IFYN$="Y"THEN2000
2050 IFYN$="N"THEN GOSUB1020
2060 FL=2:RETURN
3000 REM* DELETE ROUTINE TO BE ENT
ERED HERE
4000 REM* PRINT ROUTINE TO BE ENTE
RED HERE
5000 REM* SAVE ROUTINE:A=0:FL=5
5001 CLS: CURSOR10,4:PRINT"INSERT
BLANK CASSETTE -":CURSOR10,5:PRINT
"PRESS PLAY/RECORD"
5002 CURSOR10,7:PRINT"PRESS ANY KE
Y"
5003 GETA$:IFA$=""THEN5003
5010 WOPEN"DATAFILE"
5020 PRINT/TNR
5030 FORK=1TONR+1:PRINT/TNA$(K),AD
$(K),SU$(K),PC(K):NEXT
5040 CLOSE
5050 USR(62):RETURN
6000 REM* LOAD ROUTINE:A=0:FL=6
6001 CLS: CURSOR10,4:PRINT"INSERT
BLANK CASSETTE -":CURSOR10,5:PRINT
"PRESS PLAY"
6002 CURSOR10,7:PRINT"PRESS ANY KE
Y"
6003 GETA$:IFA$=""THEN6003
6010 ROPEN"DATAFILE"
6020 INPUT/TNR
6030 FORK=1TONR+1:INPUT/TNA$(K),AD
$(K),SU$(K),PC(K):NEXT
6040 CLOSE
6050 USR(62):RETURN
7000 REM* VIEW ROUTINE
7010 CLS:INPUT"WHICH RECORD DO YOU
 WISH TO VIEW         -0 TO EXIT";R
N
7020 IFRN=0THEN RETURN
7030 J=RN
7040 PRINTNA$(J):PRINTAD$(J):PRINT
SU$(J):PRINTPC(J)
7050 INPUT"ANOTHER (Y/N)";YN$
7060 IF YN$="Y"THEN 7010
7070 RETURN
8000 REM* CHECK ROUTINE:A=0
8010 PRINT:PRINT
8020 CURSOR 4,20:INPUT"ALL OK (Y/N
)";YN$
8030 IF(YN$<>"Y")*(YN$<>"N")THEN80
20
8040 RETURN
```

To summarise, the general form of a GOSUB/RETURN is as follows:



Recreational Therapy

from Alistair Traylen

Here are a couple of well known programs adapted for the PC-1500. They really don't need any operating instructions - perhaps just dexterous fingers.

Aerial Combat

```
5    "A":CLEAR
10   DIM A$(5):DIM B$(5):DIM D$(5)
12   LET D$(1)="02":D$(2)="04":D$(3)=
     "08":D$(4)="10":D$(5)="20"
15   B=1:A=1
20   DATA "0302020702", "0604040E04",
     "0C08081C08", "1810103810","3020207020"
30   FOR Z=1 TO 5:READ A$(Z):LET
     B$(Z)=A$(Z): NEXT Z
35   FOR V=1 TO 3
40   FOR Z=1 TO 22: WAIT 5
45   IF Z=22 LET Z=1: GOTO 200
50   C$=INKEY$
60   IF C$=CHR$ 50 LET A=A+1:B=B+1: IF
     A>5 LET A=5
70   IF C$=CHR$ 56 LET A=A-1:B=B+1: IF
     A<1 LET A=1
80   IF C$=CHR$ 54 LET B=B+2
85   IF B>21 LET B=1
87   IF C$=CHR$ 52 LET E=1:BEEP 1,50
90   IF E=0 GOTO 130
100  IF E=1 FOR Y=1 TO 3
110  LET C=B+Y: IF Y=3 LET E=0
120  CURSOR C:GPRINT D$(A)
125  IF C$=" " LET B=B+1
130  LET D=RND 5
140  CURSOR Z:GPRINT B$(D)
150  CURSOR B:GPRINT A$(A)
155  IF C=Z AND (A=D OR A=D-1) AND E=1
     BEEP 2,100:GOTO 165
160  GOTO 170
165  CURSOR Z:PRINT "*":LET S=S+1
170  CLS
180  IF E=1 NEXT Y
190  NEXT Z
200  NEXT V
210  WAIT 280:PRINT "GAME OVER "; "SCORE*";S
220  INPUT "PLAY AGAIN ENTER (OK)";W$
230  IF W$<>"OK" GOTO 250
240  LET S=0: GOTO 35
250  END
260  REM *** ALISTAIR TRAYLEN ***
```

One Hundred

```
5    "B":CLS :CLEAR :WAIT 100:RANDOM
10   GOSUB 300
20   PRINT "RUNNING TOTAL=";RT
30   PRINT "ENTER YOUR CHOICE"
40   INPUT "BETWEEN 1&11",YN
50   IF YN<1 OR YN>11 BEEP 4,100: GOTO 40
60   LET RT=RT+YN
70   PRINT "THE TOTAL IS NOW";RT
80   IF RT>=100 GOTO 160
90   LET MN=11*INT ((RT+9)/11)-RT+1
100  IF MN<>0 GOTO 120
110  LET MN=RND 11
120  PRINT "MY CHOICE IS";MN
130  LET RT=RT+MN
140  IF RT>=100 GOTO 170
150  GOTO 20
160  PRINT "YOU WIN WITH TOTAL OF";RT:GOTO 180
170  PRINT "I WIN WITH A TOTAL OF";RT
180  INPUT "TO PLAY AGAIN TYPE (OK)",G$
190  IF G$<> "OK" END
200  CLEAR :GOTO 20
210  END
300  PRINT "THE OBJECT IS TO BEAT THE"
310  PRINT "MACHINE BY ADDING A NUMBER"
320  PRINT "TO THE RUNNING TOTAL"
330  PRINT "THE FIRST TO 100 WINS"
340  RETURN
350  REM *** ALISTAIR TRAYLEN***
360  END
```

USER GROUP INFORMATION

Each month we will provide as much space as is necessary to promote existing Sharp User groups and help establish new ones. Our aim is to publish the Names, Suburbs and Telephone numbers of people who are, or would like to be, contact points for specific groups.

Readers, who may otherwise not be aware of a group in their locality, will get in touch with the contacts. Similarly, any enquiries we receive can be referred to the contact points.

In order to take advantage of this opportunity to advertise the existence of your group free of charge (or to start a new group), all interested parties are invited to submit the following details:

Name of Group, Association or Society
Address of regular meeting place (include Post Code)
Date of each regular meeting (eg. 1st Tuesday each month)
Time of regular meetings (eg. 8.00p.m. to 10.30p.m.)
Activities - including the range of equipment normally used
Special interest sub-groups (if any)
Name, Address and Telephone number of contact points

Naturally there are deadlines for each edition of SHARP FOCUS. Without making any promises, any details received by the 10th of each month will normally be included in the next months publication.

Please send your submissions directly to The Editor, SHARP FOCUS, Suite 1, 33 The Centreway, Mt. Waverley, Victoria 3149.

Established Groups

WESTERN AUSTRALIA

WA Pocket Computer Club and MZ User Group

Venue: Exhibition Hall, Rockeby Road, Subiaco.
Date: Every second Thursday of each month.
Time: 7.30 - 10.00. The club consists of pocket computer owners (80%) and MZ-700 owners (20%).
Contact: Stuart Bromley (09) 277 7477

SOUTH AUSTRALIA

The Adelaide Sharp Computer Club

Venue: 49 Oxford Terrace, Unley
Date: Every second Wednesday of each month.
Time: From 7.00 p.m. onwards. Mainly MZ-700 owners plus a few pockets.
Contact: Wayne Edge (08) 386 1179

NEW SOUTH WALES

Pocket Computer Users' Club

Venue: Woodstock Community Centre, Church St., Burwood
Date: The first Wednesday of each month and the following Saturday (except for January).
Time: From 7.30 on Wednesdays or 2.00 on Saturdays. For anyone interested in pocket computers whatever the brand.
Contact: George Antonijevic (02) 683 4296

VICTORIA

Sharp Computer Users' Association

Venue: Burwood Heights Primary School, Mahoney's Rd., East Burwood.
Date: The second Friday of each month.
Time: From 7.30 p.m. onwards. Often with guest speakers followed by special interest groups for Graphics, Programming and Games.
Contact: Arthur Harris (03) 233 4661

Geelong Sharp User Group

Venue: YMCA, 78 Yarra Street, Geelong.
Date: Twice a month - the second Monday is a workshop and the last Monday is a general meeting.
Time: 7.00 p.m to 9.30 p.m. Meetings normally cover the MZ series only.
Contact: John Carassellos (052) 91271 PO Box 936, Geelong, 3220

Contact points for new groups

QUEENSLAND
Kev Stow of Bundama has offered to act as a contact point for a group in his area. Interested parties please ring (07) 282 4312.
Also in Queensland, Wayne Lukey advises that he has obtained discounts from local shops for members of the Brisbane Sharp User Group. Contact Wayne on (07) 395 2649.

VICTORIA
Anthony Saliba in Rosebud wishes to organise a group for MZ-700 owners. He can be contacted after 4.00 p.m. on (059) 863024.

SHARP FOCUS
- some inside information

The magazine has been produced for current and impending Sharp users, and will naturally rely quite considerably upon contributions received from 'the field'.

We welcome submissions from all quarters, be they from novices or experienced users, and we will pay for any item published.

LETTERS - whether a hint, tip, moan or question, it doesn't matter - a payment of $5.00 will be made for those published.

CARTOONS - to all budding da Vinci's whose creation appears in the magazine, we will pay $5.00.

PROGRAMS - these will attract a rate of $10.00 per published page. However, we must insist that each program is submitted on a disc or tape (preferably with a listing), and a narrative describing the objectives of the program, how it works, running instructions and any other relevant information.

We will return submissions if specifically requested to do so only if a stamped and return addressed envelope (or padded bag) of suitable proportions is provided.

ADVERTISERS - we have rates for single or multiple insertions which can be obtained by contacting the address below.

All correspondence should be addressed to:

The Editor, SHARP FOCUS
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